Strategy Research Project

A New Paradigm for Defense Rapid Acquisition

by

Mr. Peter M. Vinch
Defense Intelligence Agency

United States Army War College
Class of 2012

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
03/12/2012	Strategy Research Project	

4. TITLE AND SUBTITLE

A New Paradigm for Defense Rapid Acquisition

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Mr. Peter M. Vinch, DIA

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Colonel David R. Arrieta
Department of Command Leadership
and Management

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Army War College
122 Forbes Avenue
Carlisle, PA 17013

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Distribution A: Approved for public release, distribution is unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The experience of the U.S. military over the last ten years has shown that adversaries are rapidly adapting new technologies and tactics, techniques, and procedures to counter U.S. battlefield supremacy. This volatile and uncertain environment greatly increases the risk to U.S. military personnel as they fulfill critical mission requirements. The Department of Defense has created over 20 ad hoc offices, each with their own unique practices and procedures, to rapidly fulfill urgent battlefield needs that have arisen due to this established trend. The author proposes that most of the current 20 ad hoc offices be federated together into a single rapid acquisition office, the Office of Rapid and Critical Acquisition (ORCA). ORCA would utilize standardized acquisition practices for rapid fielding initiatives and ensure the long-term sustainability of this critical capability.

15. SUBJECT TERMS

Military agility, Joint Urgent Battlefield Needs (JUONS), Operational Need Statements (ONS), Asymmetric threats

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
UNCLASSIFED	UNCLASSIFED	UNCLASSIFED	UNLIMITED	30	

USAWC STRATEGY RESEARCH PROJECT

A NEW PARADIGM FOR DEFENSE RAPID ACQUISITION

by

Mr. Peter M. Vinch
Defense Intelligence Agency

Colonel David R. Arrieta
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Mr. Peter M. Vinch

TITLE: A New Paradigm for Defense Rapid Acquisition

FORMAT: Strategy Research Project

DATE: 12 March 2012 WORD COUNT: 6076 PAGES: 30

KEY TERMS: Military agility, Joint Urgent Battlefield Needs (JUONS), Operational Need Statements (ONS), Asymmetric threats

CLASSIFICATION: Unclassified

The experience of the U.S. military over the last ten years has shown that adversaries are rapidly adapting new technologies and tactics, techniques, and procedures to counter U.S. battlefield supremacy. This volatile and uncertain environment greatly increases the risk to U.S. military personnel as they fulfill critical mission requirements. The Department of Defense has created over 20 ad hoc offices, each with their own unique practices and procedures, to rapidly fulfill urgent battlefield needs that have arisen due to this established trend. The author proposes that most of the current 20 ad hoc offices be federated together into a single rapid acquisition office, the Office of Rapid and Critical Acquisition (ORCA). ORCA would utilize standardized acquisition practices for rapid fielding initiatives and ensure the long-term sustainability of this critical capability.

A NEW PARADIGM FOR DEFENSE RAPID ACQUISITION

Since the tragic events of September 11, 2001, the United States has been operating within a volatile and uncertain military environment. This environment is populated not just by nation-state adversaries fielding conventional armed forces, but is also increasingly populated by state and non-state actors using irregular warfare tactics to defeat the United States vast military technological and training superiority.[1] "Unlike the more predictable threats of the cold war that the Pentagon could anticipate and prepare for, threats today emerge on a daily basis, and are often asymmetrical to our existing capabilities."[2] Technologically "capable adversaries who are adept at acquiring and adapting weapons from widely available commercial technology" pose a major threat to the United States' ability to safely and effectively execute mission critical tasks.[3] The ease with which advanced technology is able to be procured has made "irregular threats ever more lethal, capable of producing widespread chaos, and otherwise difficult to counter."[4] The irregular threats therefore represent significant challenges to our tactical forces and are ones for "which the majority of the U.S. military has been organized, trained, and equipped."[5,6] U.S. military personnel are highly adaptable to changing field conditions, as demonstrated in both Iraq and Afghanistan over the past ten years, however, they often lack the equipment necessary to effectively counter emergent adversarial Tactics, Techniques, and Procedures (TTPs).

In order to counter emergent adversarial TTPs, it is imperative that the Department of Defense (DoD) enhance its "ability to rapidly and effectively transition commercial and military-unique products to [the] war fighters in the field."[7] Current acquisition processes are unfortunately not geared to produce such results. As then

Secretary of Defense Gates noted in the 2009 edition of Foreign Affairs, DoD's "conventional modernization programs seek a 99 percent solution over a period of years. Stability and counterinsurgency missions require 75 percent solutions over a period of months … it is the time to think hard about how to institutionalize the procurement of capabilities and get them fielded quickly."[8] Current acquisition regulations and DoD business practices are not "geared to acquire and field capabilities in a rapidly shifting environment."[9] Further, the Defense Science Board, in a 2009 report titled Creating a Strategic DOD Acquisition Platform, stated that the Department of Defense "lacks the ability to rapidly field new capability to the war fighter in a systematic and effective way. Currently there are numerous rapid reaction programs and organizations that respond to urgent needs as defined by combatant commanders. It is estimated that these programs spend nearly $6 billion annually … these activities tend to be ad-hoc in formation and one-of-a-kind … with little emphasis on training and sustainment requirements associated with fielding."[10] Clearly, the Department has recognized the shortcomings of the acquisition system to provide quick solutions to the warfighter, as evident by the more than 20 ad hoc organizations stood up to address the problem.[11] However, the Department has done little to institutionalize these organizations into a formalized legitimate solution and, as such, the "current approaches to implement rapid responses to urgent needs are not sustainable."[12]

A new formalized acquisition paradigm for rapid acquisition must emerge to address the shortcomings and inconsistencies of the current system. The single path acquisition system currently employed by the Department of Defense is focused solely on the development of major weapon systems and does not satisfy the need for rapid

fielding of capabilities to fulfill urgent operational requirements.[13] The Department of Defense needs to "codify and institutionalize rapid acquisition processes and practices that can be tailored to expedite delivery of capabilities that meet urgent warfighter needs."[14] Many of the current rapid acquisition organizations should be federated into a single, permanent acquisition organization that utilizes these rapid acquisition processes.[15] This organization should focus on "rapid fielding … of time-urgent capabilities" and be staffed with both military and government civilian personnel capable of developing fielding, training, program planning, acquisition, and program management plans to support the rapid fielding initiative.[16,17] In addition, the executive and legislative branches "must establish a fund for rapid acquisition" to enable rapid fielding of capabilities.[18] As the Defense Science Board found in its 2010 study on Enhancing Adaptability of U.S. Military Forces, the Department of Defense "must move beyond [its] cultural, organizational, and regulatory barriers and achieve greater adaptability across the enterprise."[19]

Recommendation

Based on this research, the author recommends that all of the ad hoc rapid acquisition efforts, with the exception of the Joint Improvised Explosive Device Defeat Office (JIEDDO), intended to fulfill urgent battlefield operational requirements be federated into a single rapid acquisition office.[20] This new office should be legislated into being and funded in such a manner to permit flexibility in its acquisition efforts. Office programs should be executed strictly for the support of combatant commander's urgent battlefield needs and are not intended to replace major acquisition programs. Office programs should use clearly defined processes and should include sustainability and training packages to facilitate transition to the receiving Service office. The office should

make use of both government civilian and military personnel to reduce system transition time to the receiving Service office. Programs executed through the office should be held to brief and firm timelines to ensure that rapid fielding objectives are met. Finally, the office should employ structures that engender Department of Defense senior official participation in office activities.

The following effort lays out one possible framework for the creation of the recommended rapid acquisition office, the Office of Rapid and Critical Acquisition (ORCA). It is not intended to be an exhaustive work, but instead an overview of the major planning considerations and functional bureaucracy that must be addressed in order to successfully create a brand new rapid acquisition office.

ORCA Organizational Structure and Staffing Overview

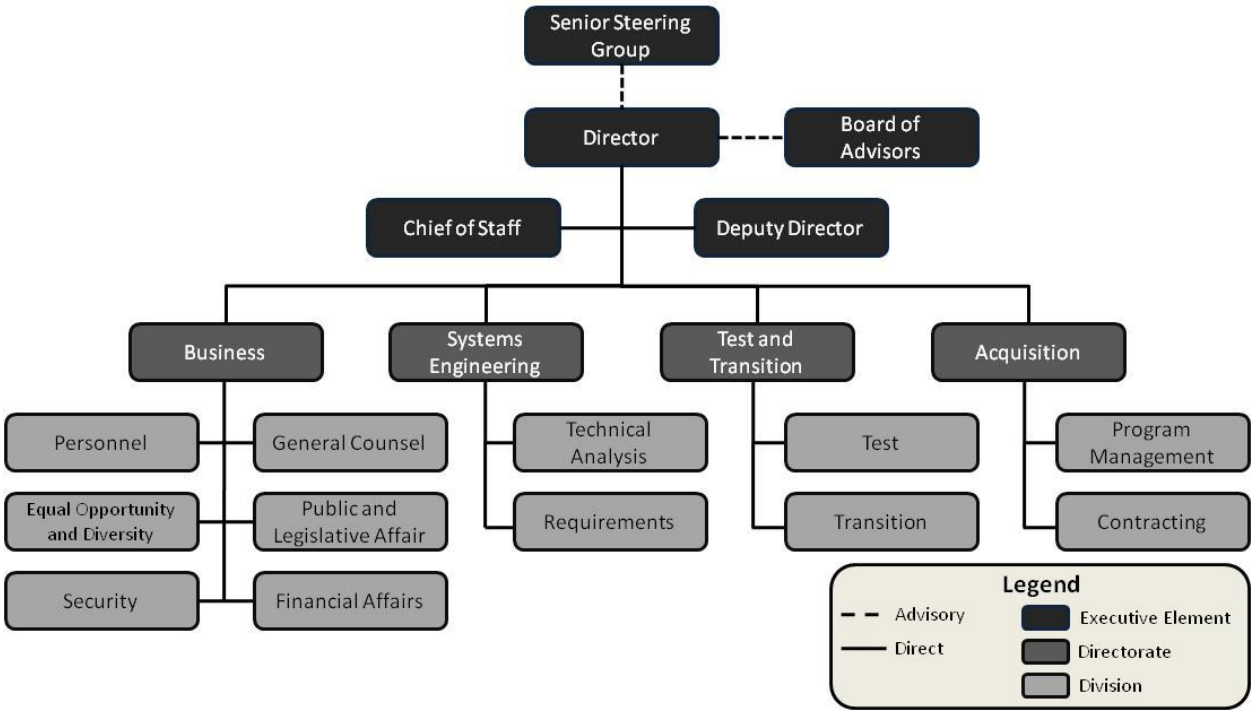

Figure 1. Office of Rapid and Critical Acquisition (ORCA) Organizational Chart

The Office of Rapid and Critical Acquisition (ORCA) is comprised of the Executive Element and four support Directorates. The Executive Elements consists of the ORCA Director, the ORCA Deputy Director, the ORCA Chief of Staff, the Board of Advisors, and the Senior Steering Group. Each Directorate contains the requisite Divisions to accomplish their unique missions in support of overall Office goals. This organizational structure is depicted in Figure 1, with each of the structural elements described in detail below.

ORCA Director. The Director of the Office of Rapid and Critical Acquisition is a three-star military officer, from any Service, appointed by the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) and approved by the Secretary of Defense. The Director's term of service shall not exceed a maximum of four years in length. The Director shall be responsible for organizing, directing, and manage ORCA resources in accordance with Office objectives as specified in the generating legislation and additional guidance provided by the USD (AT&L). The Director shall be responsible for testifying before Congress on the status of Office funds, projects, and initiatives as required by congressional inquiry and shall act as deputy chair for the Senior Steering Group.

ORCA Deputy Director. The Deputy Director of the Office of Rapid and Critical Acquisition is a non-appointed, competitively filled, level 3 member of the Senior Executive Service (SES-3). As a non-political appointed SES, the Deputy Director will be insulated from changeover due to national political shifts and will provide continuity-of-command to the Office upon change-of-command of the military ORCA Director. The Deputy Director shall chair the Board of Advisors. The Deputy Director shall execute the

powers of the Director in the case that the Director's position is vacant or the sitting Director is incapable of perform his or her duties as assigned.

ORCA Chief of Staff. The Chief of Staff of the Office of Rapid and Critical Acquisition is a non-appointed, competitively filled, level 2 member of the Senior Executive Service (SES-2). The Chief of Staff shall serve as the senior staff officer for the Director and is responsible for ensuring that all ORCA business practices are up-to-date and in accordance with all United States Government regulations.

Senior Steering Group. The ORCA Senior Steering Group (OSSG) is an advisory board of Department of Defense senior civilian and military officials whose purpose is to provide top level guidance on urgent force structure needs to increase survivability; current and emerging adversarial threats; and potential emergent technologies to counter these threats. The OSSG will review ORCA investment sectors and ensure that ORCA programs are aligned with overall Department of Defense mid and long-term development initiatives. The OSSG will meet bi-annually at the beginning of the first and third quarters of the fiscal year. The OSSG will be chaired by the Deputy Secretary of Defense (DEPSECDEF) and deputy chaired by the Vice Chief of the Joint Chiefs of Staff. Full OSSG members include, at a minimum: the Vice Chief of Staff of the Army; the Vice Chief of Naval Operations; the Vice Chief of Staff of the Air Force; the Assistant Commandant of the Marine Corps; the Military Deputy Commander of each U.S. Combatant Command; Director, Operational Test & Evaluation (OSD(DOT&E)); Director, Cost Assessment and Program Evaluation (CAPE); Assistant Secretary of Defense, Department of Defense Research & Engineering (ASD(R&E)); Director, Defense Intelligence Agency; and the Undersecretary for Defense for Acquisition,

Technology, and Logistics (USD(AT&L)). The ORCA Senior Scientist, ORCA Senior Engineer, and each of the four ORCA Directorate Chiefs will attend OSSG meetings to ensure transparency into OSSG recommendations and concerns for ORCA but will have no formal input into the discussions.

Board of Advisors. The ORCA Board of Advisors (BoA) is a panel of Department of Defense senior civilian and military officials whose purpose is to support the ORCA Director on matters of rapid acquisition decision-making. The BoA will support the Director in the following areas: provide analysis of emerging battlefield threats; provide analysis of emerging technology development trends; review current ORCA requirements; support the Director's project approval reviews that area required to initiate ORCA programs; support the Director's preparation to testify before Congress; and provide input into ORCA congressional budget requests. The BoA is comprised of the following individuals: the Directors of the United States Department of Energy National Laboratories and Technology Centers; the Directors of each of the Services research and development offices; the Chiefs of each Combatant Command's Intelligence Directorate (J-2s); the Chiefs of each Combatant Command's Resource and Assessments Directorates (J-8s); the Chiefs of each Service's Resource Programming Directorates (G-8, N-8, and A-8); and representatives from key defense industrial base contractors invited to participate on the board. Congressional staffers from the majority and minority leaders of the U.S. House and Senate Armed Services Committees and the U.S. House of Representatives Committee on Appropriations Sub-Committee for Defense will audit the board but will have no direct input into board decisions or recommendations. The BoA will meet monthly, or as requested from the Director, to

support critical decisions and ensure that urgent battlefield requirements are being met within ORCA's rapid acquisition timelines.

Business Directorate. The Business Directorate would be responsible for executing all of the functions required to successfully execute efficient government business practices with ORCA. The Directorate is composed of the following Divisions: Personnel; Equal Opportunity and Diversity; Security; General Counsel; Public and Legislative Affairs; and the Financial Affairs. The Personnel Division shall establish and execute all administrative policies for the office, including but not limited to: personnel hiring practices; personnel leave and earning policies; personnel award structures; and the personnel yearly review system. The Equal Opportunity and Diversity Division shall ensure that the office is compliant with all U.S. government equal opportunity and diversity legislation; investigate all complaints of violations of these laws; and mediate between disputing parties when possible. The Security Division shall ensure that all aspects of security within the office, such as: physical security of the office facilities and personnel; processing entry requests for visitors into the facilities; positive storage of all classified materials; and information security of the internal office network and computer terminals. The General Counsel Division shall provide all legal advice to office personnel in the execution of their work duties. The General Counsel Division, as per 10 U.S.C. § 140, will conform to all protocols and standards established by the Department of Defense Office of the General Counsel.[21] The Public and Legislative Affairs Division shall assemble and review all official office public announcements and press releases, process all Freedom of Information Act (FOIA) requests, and address all formal requests for information from the U.S. Congress. The Financial Affairs Division shall

apportion congressional appropriated funding to the appropriate division for execution of office business functions as well as track office program commitments, obligations, and expenditures. The Financial Affairs Divisions also houses the comptroller, who is responsible for assuring the quality of all accounting and financial reporting for the office.

Systems Engineering Directorate. The Systems Engineering Directorate will be responsible for executing deliberate engineering processes to ensure that urgent battlefield Service requirements are met using the most mature, reliable, and suitable technologies available for procurement. The Directorate is composed of the Technology Analysis and Requirements Divisions. Both Divisions will be staffed by a mixture of permanent government civilians and Service personnel with appropriate systems engineering experience. The government civilians will provide office continuity as the Service personnel rotate in and out of position, while the Service personnel will provide knowledge of each Service's unique culture; tactics, techniques, and procedures; and facilitate Service and Office interaction. Additionally, the Directorate will house both the Senior Scientist and the Senior Engineer. The Senior Scientist shall review and verify the market survey findings of the Technology Analysis Division; direct industry areas of study for the Technology Analysis Division; represent the Office at industry trade shows; keep abreast of current and emerging technologies of interest to the Office; and report findings to the Board of Advisors. The Senior Engineer shall review and approve Service requirements verified by the Requirements Division; review and validate all Office project's Program Management Plans for cost, schedule, and risk; and review and validate all Office project's Test Plans.

The Requirements Division shall accept and actively seek out and verify critical battlefield Service requirements that shall be used to initiate the execution of Office projects. Requirements may be gathered by a variety of sources, to include, but not limited to: Joint Urgent Need Statements (JUONS) that have been submitted by a U.S. Combatant Command and validated by the Joint Requirements Oversight Council (JROC); or a direct request to ORCA from a Service requirement sponsor such as a U.S. Army Operational Needs Statement (ONS). ORCA will utilize mobile requirement teams capable of traveling directly to the various locations in order to facilitate communications between ORCA and the Services or Combatant Commands requirements directorates. In order to verify a requirement for execution, Division staff will analyze each requirement to ensure that it unambiguously expresses the desired system behavior in its intended environment and any critical environmental interfaces that the system must support.[22] Any ambiguity in the requirement will be identified and addressed by the requesting Service or Combatant Command. Requirements Division personnel will be Defense Acquisition Workforce Improvement Act (DAWIA) certified in systems engineering.

The Technology Analysis Division shall be responsible for identifying mature, reliable, and suitable technologies to fulfill requirements identified by the Requirements Division and emergent technology areas directed by the Senior Scientist. Suitable technologies will be identified through execution of market surveys and analyzed via a Technology Readiness Assessment (TRA) to determine the technologies current Technology Readiness Level (TRL). The TRA is a “formal, systematic, metrics-based process and accompanying report that assesses the maturity of technologies.”[23]

Technologies suitable for use by ORCA programs will at a minimum be TRL -6, meaning that a ”system prototype demonstration in a relevant environment” has been completed and that the technology is awaiting qualification through test and demonstration in an operationally relevant environment, which the Office will complete during the project’s test phase.[24] Proposed technologies must be sufficiently mature to facilitate ORCA project timelines and meet the rapid transition goals of the Office.[25] Technologies which meet TRL standards will be entered into ORCA’s industry technology database. In support of ORCA project execution, the Technology Analysis Division will execute an engineering analysis to determine which technologies identified during the market surveys are suitable to fulfill requirements validated by the Requirements Division. Technology Analysis Division personnel will be DAWIA certified in systems engineering. Any rapid response must be based on proven technology and robust manufacturing processes.

Test and Transition Directorate. The Test and Transition Directorate will be responsible for ensuring that ORCA systems successfully fulfill urgent battlefield Service requirements and have adequate initial training packages to facilitate transition of the system to the Service transition office. The Directorate is composed of the Test and the Transition Divisions. Both Divisions will be staffed by a mixture of permanent government civilians and Service personnel from the appropriate career fields, such as: Logistics; Operations, Plans, and Training; and Operations Research/Systems Analysis.[26] The government civilians will provide office continuity as the Service personnel rotate in and out of position, while the Service personnel will provide

knowledge of each Service's unique culture; tactics, techniques, and procedures; and facilitate Service and Office interaction.

The Transition Division is responsible for developing the requisite training and logistic support plans to facilitate the transition of the ORCA developed system to the warfighter. Transition is the "process of inserting critical technology into military systems to provide an effective weapons and support system in the quantity and quality needed by the warfighter to carry out assigned missions."[27] In order to expedite this process, the Division will work in conjunction with the Service transition office through a collaborative and iterative methodology to ensure that training and logistic support packages follow Service specific standards for format, nomenclature, and content. Transition planning will include two discreet support planning tracks: a long-term support plan for systems that demonstrate enduring use during operational service which will result in the system being transferred to a program of record; and a short-term support plan for systems that that fulfilled an urgent operational need that has been satisfied which will result in the system being closed out.[28] Close out support plans should include estimates of system disposal costs to be provided by the Service transition office. The Transition Division and the Service transition office will work collaboratively throughout the program's lifecycle to develop training and logistic support packages, with finalized training and logistic support packages provided to the Service transition office at the time of first delivery of system equipment. Transition Division personnel will be DAWIA certified in life cycle logistics.

The Test Division is responsible for performing operational test and evaluation of ORCA projects. Test and evaluation "enables an assessment of the attainment of

technical performance, specifications, and system maturity to determine whether systems are operationally effective, suitable and survivable for intended use" and assess the effectiveness to which the system under test has satisfied the specifications as defined in the Service requirement.[29] In order to accomplish this task, the Division will work with the ORCA program management team, ORCA systems engineers, and Service transition office to develop the Operational Test Plan for the system. All Operational Test Plans will be reviewed and validated by the Senior Engineer. Tests will be performed in operationally relevant environments by system operators provided by the Service transition office and trained by the Transition Division for this purpose. Test Division personnel will be DAWIA certified in test and evaluation.

Acquisition Directorate. The Acquisition Directorate will be responsible for providing all management and contracting services to support ORCA program development. The Directorate will be staffed by civilian personnel to ensure that institutional memory and lessons learned are retained within ORCA. The Directorate is composed of the Program Management and Contracting Divisions.

The Program Management Division is responsible for the "planning, organizing, staffing, controlling, and leading the combined efforts of participating/assigned civilian and military personnel and organizations, for the management" of ORCA programs from initiation until system transition.[30] The Program Management Division will develop a program management plan for all approved ORCA projects, coordinate ORCA personnel in the execution of this plan, and coordinate transition of the project to the Service transition office upon successful completion of all plan activities. ORCA program managers will be DAWIA certified in program management.

The Contracting Division will be responsible for executing the authority to enter into, administer, and if necessary terminate contracts for the U.S. government in support of the execution of ORCA programs.[31] The Contracting Division will work in close conjunction with the System Analysis Division to perform preparatory evaluations of contractors with technologies entered into the ORCA industry technology database to familiarize themselves with the contracting practices and history of potential technology providers. The Contracting Division will also write contracts in such a manner that, upon successful validation of the system test and evaluation, a contract option can be exercised to deliver the initial procurement lot to the Service transition office. These efforts will support shortened project timelines associated with the Office's rapid acquisition mandate. ORCA contracting officers will be DAWIA certified in contract management.

ORCA Projects

The ability for ORCA to rapidly fulfill urgent battlefield requirements is predicated upon close and coordinated partnership between the ORCA program management team and the requesting Service office. In order to facilitate this partnership and support the program development, the requesting Service office must: identify a Service transition office to receive the system; agree to fund for outyear system operations and maintenance costs, disposal costs, and any system upgrades required after initial fielding; agree to fund for procurement costs for any equipment lots past the initial lot; have approval for all funding agreements from the Service's Programmer, and agree to provide Service personnel to assist the ORCA program management team with system demonstration testing. In return for this assistance and in addition to managing the program, ORCA program will procure the initial equipment lot; supply funds to cover

transition costs for the initial lot; provide the Service transition office with a user training package; and supply funds for operations and maintenance costs for a single year of use. In this manner, ORCA funds will be used as bridge funds between initial fielding and receipt of Service programmed sustainment funds.

The Executive Leadership approval authority necessary to initiate an ORCA project will be directly related to the overall cost estimate to execute the program, to include the first year operations and maintenance costs. A program whose total cost estimate for execution by ORCA is less than $25M, or a Tier 1 program, will require execution approval by the ORCA Director to be initiated. A program whose total cost estimate for execution by ORCA is greater than $25M, or a Tier 2 program, will require program concurrence from the ORCA Director, execution approval by the USD (AT&L), and notification of program initiation to the DEPSECDEF. The tiered levels of program approval will ensure that higher cost programs are coordinated through senior DoD leadership and align with DoD initiatives. The approval level required to execute Tier 2 programs parallel acquisition rules established for Major Defense Acquisition Programs (MDAPs) in DoD Instruction 5000.02, specifically that the USD(AT&L) may designate any acquisition program as an MDAP due to the critical nature of that program and thus require the USD(AT&L)'s approval to execute.[32]

To ensure that ORCA programs align with the Office's primary objective of rapid acquisition, a maximum allowable project time will be enforced. The maximum allowable time that may elapse from project initiation until first delivery of equipment to the Service transition office is twelve months. If first delivery does not occur within the twelve month window, the project will be reviewed by the Executive Leadership who approved

execution of the project for cancellation. At any time during the project's execution, the Program Manager may recommend to Executive Leadership project cancellation if significant delays are experienced that would preclude first delivery of equipment to the Service transition office within the twelve month window.

Figure 2 depicts the work flow for a typical ORCA project, from receipt of a requirement through to transition to the requesting Service component. ORCA's work flow utilizes codified concurrent program development phases, as denoted by the parallel activity lines, to ensure that ORCA programs meet the rapid acquisition timeline. Each phase's activity lead is denoted by shape of the node as defined in the figure 2 legend.

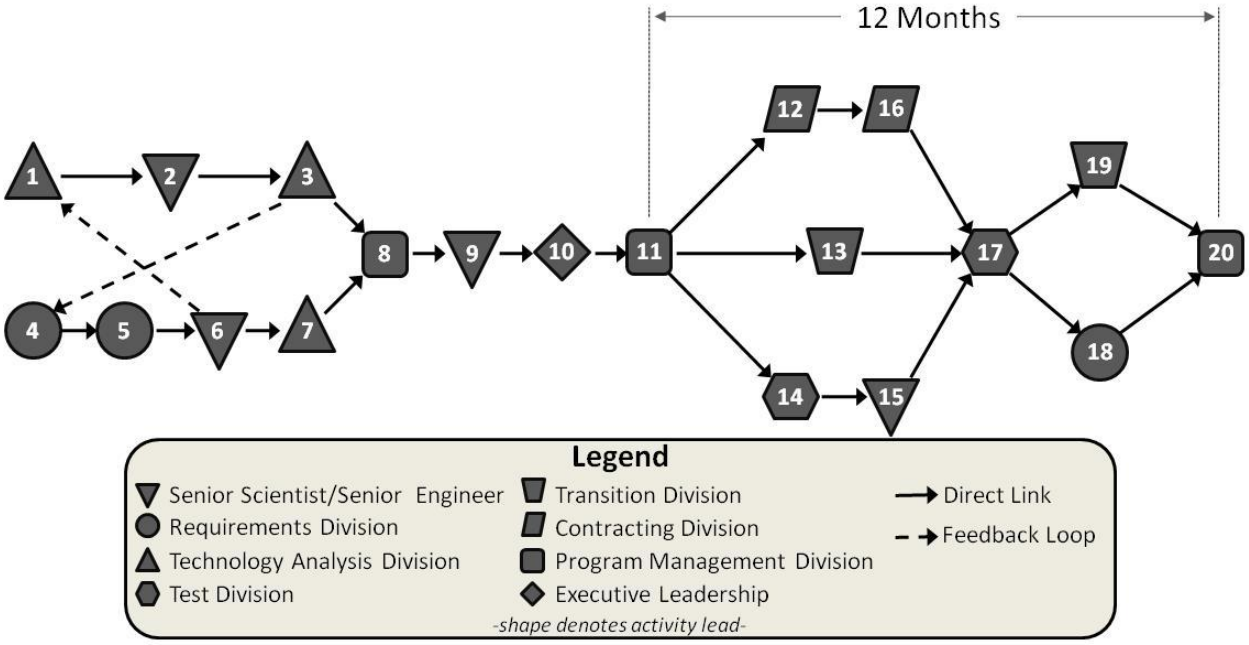

Figure 2. Typical ORCA Project Work Flow

Description of each phase is as follows, with activity lead shown in parenthesis:

1. Market Survey (Technology Analysis Division): The Technology Analysis Division will identify technologies from industry suitable for use by ORCA

projects from areas of study directed by the Senior Scientist. Once identified, the Technology Analysis Division will apply the TRA process to each technology to determine the technology's Technical Readiness Level.

2. Market Survey Review (Senior Scientist): The Senior Scientist will review market survey results to ensure that the TRA process has been satisfactorily applied to the technology in question.
3. Populate Industry Technology Database (Technology Analysis Division): The Technology Analysis Division will ensure that all market survey reports approved by the Senior Scientist are uploaded into the ORCA industry technology database. The industry technology database is reviewed by the Requirements Division to help identify potential capability gaps that ORCA could rapidly fulfill.
4. Identify Requirement (Requirements Division): The Requirements Division will identify suitable requirements for validation and execution by ORCA.
5. Verify Requirement (Requirements Division): The Requirements Division will work with the requesting Service office to address any ambiguity in the requirement.
6. Approve Verified Requirement (Senior Engineer): The Senior Engineer will approve the requirement verified by the Requirements Division to ensure that the requirement unambiguously expresses the desired system behavior in its intended environment and any critical environmental interfaces that the system must support. Verified requirements are reviewed by the Technology Analysis Division to help guide market survey efforts.

7. Execute Engineering Analysis (Technology Analysis Division): In conjunction with the Requirements Division, the Technology Analysis Division will execute an engineering analysis to provide the program manager with a range of technology options that could be used to fulfill the requirement.
8. Develop Program Management Plan (Program Management Division): The Program Management Division will develop a program management plan that clearly identifies: technology that will be used to fulfill the requirement; anticipated project cost; a notional project schedule; ORCA personnel requirements; the Service transition office and the level of support it has pledged to the project; contracting requirements; and cost, schedule, and technical risks.
9. Validate Program Management Plan (Senior Engineer): The Senior Engineer will validate to the program management plan to ensure that all cost, schedule, and technical risk assessments are reasonable and within accepted ORCA tolerances.
10. Project Approval Review (Executive Leadership): ORCA Executive Leadership will review the validated requirement and program management plan and approve or disapprove execution of the project. The level of project review is dependent upon the total expected cost of the program.
11. Project Initiation (Program Management Division): The Program Management Division will begin execution of the program management plan, leveraging ORCA personnel from other Divisions to form a cohesive project team.

12. Execute Contract Actions (Contracting Division): The Contracting Division will execute contract actions to procure the necessary equipment from the Contractor to support Government test and evaluation of the system. The Contracting Division will write the contract in such a manner that, upon successful completion and validation of the system test results, a contract option can be executed to deliver the initial procurement lot to the Service transition office.
13. Develop Draft Training and Support Packages (Transition Division): In conjunction with the identified Service transition office, the Transition Division will develop draft training and support packages to train Service personnel during the System Test phase.
14. Develop Test Plan (Test Division): The Test Division will develop a system test plan that will provide an "assessment of the attainment of technical performance, specifications, and system maturity to determine whether systems are operationally effective, suitable and survivable for intended use, and/or lethal."[33]
15. Validate Test Plan (Senior Engineer): The Senior Engineer will validate the system test plan to ensure that completion of the test plan by the system will successfully demonstrate all requirement objectives.
16. Receipt of Contracted Equipment (Contracting Division): The Contracting Division will ensure that all contractually obligated items procured by the Government for the purposes of system testing have been received from the contractor.

17. Execute Program Test Plan (Test Division): The Test Division, in conjunction with Service personnel provided by the identified Service transition office, will execute the approved system test plan in an operationally relevant environment.
18. Validate Test Results (Requirements Division): The Requirements Division will validate the system test results to ensure that all operational requirement objectives have been successfully demonstrated by the system. Successful completion of this phase will graduate the system to TRL-8.[34]
19. Develop Final Training and Logistic Support Packages (Transition Division): Lessons learned and direct input from Service personnel gathered during the System Test Phase will be incorporated into the draft training package to create a final training package for delivery to the Service transition office. The final logistic support package will also be delivered.
20. Transition Project to Service (Project Management Division): Working in conjunction with the Contracting Division, the Program Management Division will transition all requisite materials to the Service transition office and the contractor will begin initial delivery of project equipment to the Service transition office.

The ORCA project work flow supports ORCA's rapid acquisition initiative through several initiatives. Concurrent development phases will ensure that programs advance steadily in key areas and will eliminate timeline inefficiencies caused by serial development practices. Mandated interaction between ORCA and the Service transition office at all phases of system development will ensure that any issues identified by the

Service transition office will be addressed before program transition occurs in order to decrease time to field the system.

ORCA Funding

The most formidable barrier to the rapid fulfillment of urgent operational needs is the availability of dedicated, flexible funding to support the effort.[35] As such, the Office will be funded through legislation of the U.S. House of Representatives Committee on Appropriations Sub-Committee for Defense as part of the Defense spending appropriation. ORCA per fiscal year funding will not exceed 0.5% of the total Defense budget for that same Fiscal Year (FY) and as such will be determined after the total defense appropriation is determined.[36] The ORCA Director will submit a budget request, based on an analysis of the current years' acquisition efforts and the outyear threat environment, to the Secretary of Defense as part of the Defense budget request. The cost associated with operating the Office will be offset by the consolidation of funds from existing ad hoc rapid acquisition efforts into ORCA.[37] As ORCA funding is intended to resolve urgent battlefield operational requirements, coupling ORCA funding to a percentage of the total Defense budget ensures that funds will be increased during times of conflict and correspondingly lowered during times of relative peace. The Defense budget waxes and wanes in response to the current operational status of the Nation's armed forces; on general, the Nation at war has a higher Defense budget than the Nation at peace. For instance, the appropriation for defense spending in 2001, signed in 2000 before the terrorist attacks of 2001, was $333 billion dollars. In contrast, the 2010 appropriation for defense spending was $636.3 billion dollars. Base ORCA funding will be no-year funds with unallocated end-of-year funds rolling over into a storage account that can be used to supplement program shortfalls in the outyears, with

the maximum value of the storage account capped at $200M. All unallocated funds in the execution year that would cause the storage account total to exceed the $200M cap would be identified to the DoD Comptroller. ORCA will not receive supplemental funding from Congress and will use the storage funds in lieu of these to fund program execution. Covering funding shortfalls to fulfill urgent battlefield requirements would be critical in the fiscal year that kinetic operations begun, as ORCA funding is tied to the Defense appropriation and would therefore be unable to be increased until the next fiscal year, or in those years during which Congress authorizes Continuing Resolution Authority (CRA) due to the delayed signature of a full Defense appropriations bill. For example, if in FY12 ORCA did not obligate $50M, than in FY13 ORCA would have the total appropriation apportioned to it by the Sub-Committee for Defense as well as the unobligated $50M from FY12 available to fund programs. If the United States were to enter into significant kinetic operations in FY13, storage account funds would be used to fulfill urgent battlefield needs until base ORCA funding could be increased to coincide with the increase of the Defense budget to cover the cost of the kinetic operations starting in FY14.

Funding a DoD enterprise in the manner described above is a departure from the norm for Congress. ORCA's use of no-year and roll-over funding authority would significantly alter Congress's ability to control certain aspects of DoD spending on a per year basis. Therefore, several methods will be employed in order to ensure the appropriate level of checks and balances remain in effect between Congress and the DoD. First, base ORCA funding is capped at a not-to-exceed value to provide Congress with the opportunity to reduce funding to be consistent with the fiscal environment the

Nation is experiencing at the time the appropriation is completed. In times of austerity when the Armed Services are being maintained but not significantly augmented, the total funding may be set significantly lower than the maximum value. Second, the storage fund cap would serve to limit the size of any potential new start programs and would only be available for commitment if ORCA does not fully execute its budgetary authority in prior fiscal years. Third, ORCA would be prohibited from receiving supplemental funding from Congress, a restriction that would require ORCA senior management to develop robust fiscal plans to ensure that future funds are available to service potential battlefield requirements. Fourth, the Service's obligation to program for lifecycle sustainment cost would provide Congress with the opportunity to deny allocation of funds to the program in the Service's Program Objectives Memorandum (POM) for the next fiscal year, serving as a forum for final congressional review of any programs executed by ORCA. Finally, the inclusion of consultant Congressional staffers from the U.S. House and Senate Armed Services Committees and the U.S. House of Representatives Committee on Appropriations Sub-Committee for Defense on ORCA's Board of Advisors would provide Congress with direct access to the ORCA program decision making process. Additionally, staffers would report to Congress on specific programs of interest to their respective committees in lieu of generic written program reporting. This method of reporting would be consistent with remarks that former Secretary of Defense Gates made in August 2010 in support of his initiatives to reform DoD business practices, specifically those comments regarding the desire to alleviate the number of congressionally mandated written reports by investigating alternative reporting methods.[38]

Summary/Conclusion

The necessity to fulfill urgent battlefield requirements identified by Combatant Commanders and Service components will continue to rise as new adversaries emerge fielding new technologies and TTPs to threaten U.S. interests. As the Defense Science Board noted in its 2010 study Enhancing Adaptability of U.S. Military Forces, "to be prepared for success in this uncertain, complex, and rapidly changing operating environment, the Department of Defense must be able to adapt rapidly, effectively, and affordably across the spectrum of its systems and their employment. Yet, the fact is that DOD's processes are complex, time-consuming, and often do not align well with the timeframes dictated by today's operational environment."[39] To address this shortcoming, the creation of a new office that combines the current, disparate rapid acquisition efforts, the Office of Rapid and Critical Acquisition (ORCA) was recommended. ORCA should be established and funded in such a manner to permit flexibility in its acquisition efforts. All ORCA programs would be executed strictly for the support of armed services urgent battlefield needs. ORCA programs would use clearly defined processes and would include sustainability and training packages to facilitate transition to the receiving Service office. ORCA would make use of both government civilian and military personnel to reduce system transition time to the receiving Service office. Programs executed by ORCA would be held to short, firm timelines to meet rapid fielding objectives needed to address urgent battlefield requirements. The proposed approach defines a new defense rapid acquisition paradigm that will enable the U.S. military to effectively counter emergent adversarial TTPs.

Endnotes

[1] Defense Science Board, *Creating a DOD Strategic Acquisition Platform* (Washington, DC: Defense Science Board, April 2009), 1-2.

[2] William R. Fast, *Improving Defense Acquisition Decision Making* (Fort Belvoir, VA: Defense Acquisition University, March 2010), 225.

[3] Defense Science Board, *Creating a DOD Strategic Acquisition Platform*, iii.

[4] U.S. Joint Chiefs of Staff, *Irregular Warfare: Countering Irregular Threats Version 2.0*, Joint Operating Concept (Washington, DC: U.S. Joint Chiefs of Staff, May 17, 2010), 4.

[5] U.S. Department of the Army, *The United States Army Operating Concept 2016-2028*, TRADOC PAM 525-3-1 (Washington, DC: U.S. Department of the Army, August 19, 2010), 10.

[6] United States Marine Corps, *Marine Corps Operating Concepts: Third Edition* (Quantico, VA: United States Marine Corps, June 2010), 113-115.

[7] Defense Science Board, *Creating a DOD Strategic Acquisition Platform*, 1-2.

[8] Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age," *Foreign Affairs* Volume 88 (January 1, 2009): 29.

[9] Defense Science Board, *Fulfillment of Urgent Operational Needs* (Washington, DC: Defense Science Board, July 2009), viii.

[10] Defense Science Board, *Creating a DOD Strategic Acquisition Platform*, 27.

[11] Defense Science Board, *Fulfillment of Urgent Operational Needs*, 9.

[12] Ibid., 27.

[13] Defense Science Board, *Creating a DOD Strategic Acquisition Platform*, 18.

[14] Defense Science Board, *Fulfillment of Urgent Operational Needs*, 24.

[15] Defense Science Board, *Creating a DOD Strategic Acquisition Platform*, 28.

[16] Ibid., 29-30.

[17] Defense Science Board, *Fulfillment of Urgent Operational Needs*, 29.

[18] Ibid., x.

[19] Defense Science Board, *Enhancing Adaptability of U.S. Military Forces: Part A. Main Report* (Washington, DC: Defense Science Board, January 2011), 13.

[20] Defense Science Board, *Creating a DOD Strategic Acquisition Platform*, 29.

[21] *Department of Defense Office of the General Counsel*, http://www.dod.mil/dodgc/about.html (accessed February 2, 2012).

[22] *Glossary of Defense Acquisition Acronyms and Terms: Requirements Analysis*, https://dap.dau.mil/glossary/pages/2893.aspx (accessed January 20, 2012).

[23] Office of the Director, Defense Research and Engineering, *Technology Readiness Assessment (TRA) Deskbook* (Washington, DC: Office of the Director, Defense Research and Engineering, July 2009), 1-1.

[24] Office of the Director, Defense Research and Engineering, *Technology Readiness Assessment (TRA) Deskbook*, 1-2.

[25] Defense Science Board, *Fulfillment of Urgent Operational Needs*, 26.

[26] *Army Commissioned Officer Jobs*, http://usmilitary.about.com/od/officerjob1/l/blaroffjobs.htm (accessed February 1, 2012).

[27] *Glossary of Defense Acquisition Acronyms and Terms: Transition*, https://dap.dau.mil/glossary/pages/2893.aspx (accessed January 20, 2012).

[28] Defense Science Board, *Enhancing Adaptability of U.S. Military Forces: Part A. Main Report*, 45.

[29] *Glossary of Defense Acquisition Acronyms and Terms: Test and Evaluation*, https://dap.dau.mil/glossary/pages/2893.aspx (accessed January 20, 2012).

[30] *Glossary of Defense Acquisition Acronyms and Terms: Program Management*, https://dap.dau.mil/glossary/pages/2893.aspx (accessed January 20, 2012).

[31] *Glossary of Defense Acquisition Acronyms and Terms: Contracting Officer*, https://dap.dau.mil/glossary/pages/2893.aspx (accessed January 20, 2012).

[32] *Acquisition Category (ACAT)*, https://acc.dau.mil/CommunityBrowser.aspx?id=189574 (accessed February 3, 2012).

[33] *Glossary of Defense Acquisition Acronyms and Terms: Test and Evaluation*, https://dap.dau.mil/glossary/pages/2893.aspx (accessed January 20, 2012).

[34] Office of the Director, Defense Research and Engineering, *Technology Readiness Assessment (TRA) Deskbook*, 1-2.

[35] Defense Science Board, *Fulfillment of Urgent Operational Needs*, 28.

[36] Ibid., 33.

[37] Ibid., 38.

[38] *DOD News Briefing with Secretary Gates from the Pentagon*, http://www.defense.gov/transcripts/transcript.aspx?transcriptid=4669 (accessed January 20, 2012).

[39] Defense Science Board, *Enhancing Adaptability of U.S. Military Forces: Part A. Main Report*, 12-13.